

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number
WO 2005/010204 A3

(51) International Patent Classification⁷: C07H 21/02

(21) International Application Number:
PCT/US2004/023269

(22) International Filing Date: 21 July 2004 (21.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/489,017 21 July 2003 (21.07.2003) US

(71) Applicant (for all designated States except US):
CREIGHTON UNIVERSITY [US/US]; 601 N. 30th
Street, Suite 1609, Omaha, NE 68131 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HOSSAIN**, Ash-
faque [US/US]; 3605 South 112th Street, Omaha, NE
68144 (US). **HANSON**, Nancy, Jo, Dohse [US/US]; 413
Brentwood Drive, Gretna, NE 68068 (US). **REISBIG**,
Mark, D. [US/US]; 5016 California Street, #4, Omaha,
NE 68132 (US).

(74) Agents: **GAMSON**, Edward, P. et al.; Welsh & Katz,
Ltd., 120 South Riverside Plaza, 22nd floor, Chicago, IL
60606 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
29 December 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: RAPID NUCLEIC ACID ISOLATION METHOD AND COMPOSITIONS THEREFORE

(57) Abstract: A method of isolating RNA from a biological specimen is provided, whereby a biological specimen is contacted with an admixture of (i) a mono-phasic solution of phenol and guanidine isothiocyanate and (ii) a lysis buffer under conditions and for a time appropriate to form a homogenate. Next, the homogenate is admixed with a water-immiscible organic solvent under conditions and for a time appropriate to form an aqueous phase and an organic phase. The aqueous phase is then contacted with a C₁-C₄ lower alcohol under conditions and for a time to form a precipitated RNA. The precipitated RNA is then recovered by centrifugation and decanting of the aqueous phase. The method can also be used to isolate total RNA. In an alternative embodiment, the biological sample is contacted with (i) a lysis buffer, and (ii) a mono-phasic solution of phenol and guanidine isothiocyanate under conditions and for a time appropriate to form a homogenate. The remaining steps of this embodiment are the same as above.

WO 2005/010204 A3